SOD-323 Plastic-Encapsulate Diodes

ESD3Z12 Uni-direction ESD Protection Diode

DESCRIPTION

Unidirectional ElectroStatic Discharge (ESD) protection diode designed to protect one signal line from the damage caused by ESD and other transients.

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

Top View
Marking Code: "**12-**"
Simplified outline SOD-323 and symbol

FEATURES

- Uni-directional ESD protection
- Low reverse stand–off voltage: 12V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

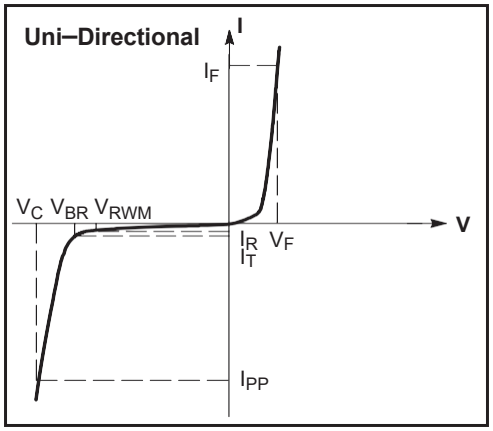
Parameter		Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	V_{ESD}(1)	±25	kV
	Contact Model		±25	
JESD22-A114-B ESD Voltage	Per Human Body Model		±16	
ESD Voltage	Machine Model		±0.4	
Peak Pulse Power		P_{PP}(2)	210	W
Peak Pulse Current		I_{PP}(2)	9	A
Lead Solder Temperature – Maximum (10 Second Duration)		T_L	260	℃
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 ~ +150	℃

(1).Device stressed with ten non-repetitive ESD pulses.

(2).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

ELECTRICAL PARAMETER

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage
V_F	Forward Voltage@ I_F
I_F	Forward Current

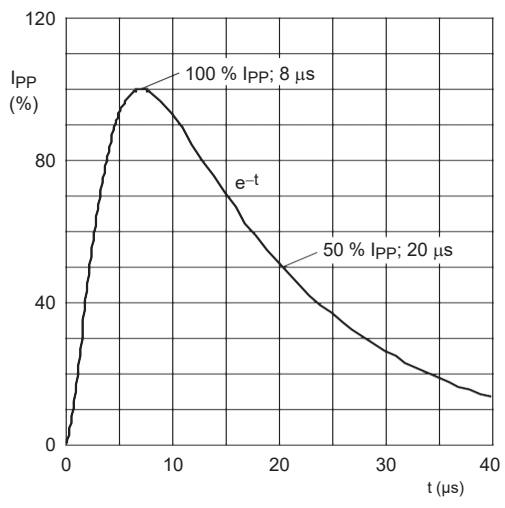


ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise noted)

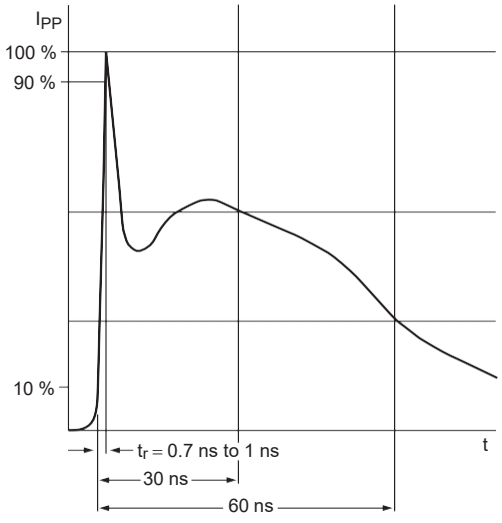
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	V_{RWM} (1)				12	V
Reverse leakage current	I_R	V_{RWM}=12V			1.0	μA
Breakdown voltage	$V_{(BR)}$	I_T=1mA	13.3		16.5	V
Clamping voltage	V_C (2)	I_{PP}=9A			24	V
Junction capacitance	C_J	V_R=0V,f=1MHz		45		pF

(1).Other voltages available upon request.

(2).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

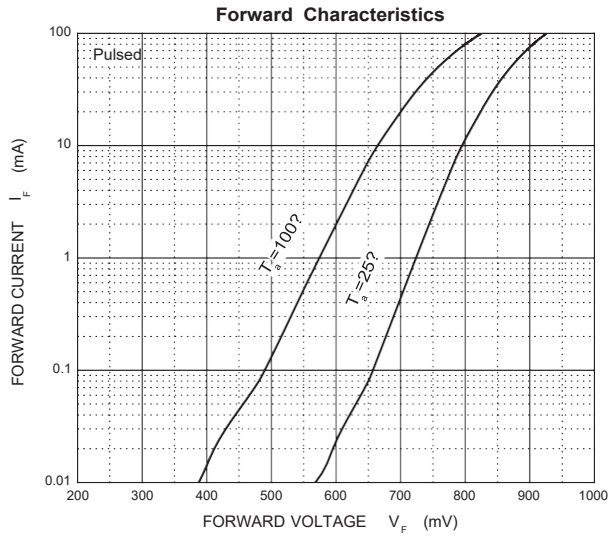


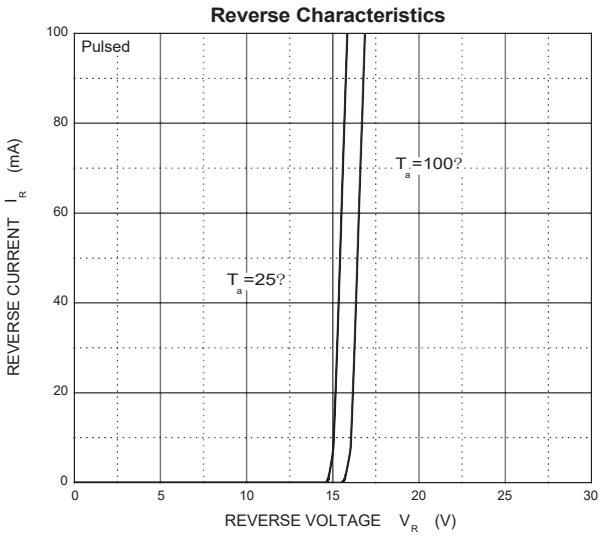
8/20 μs pulse waveform according to IEC 61000-4-5

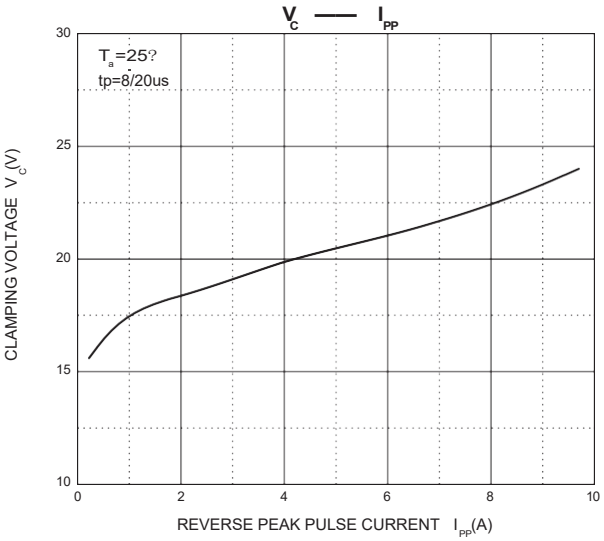


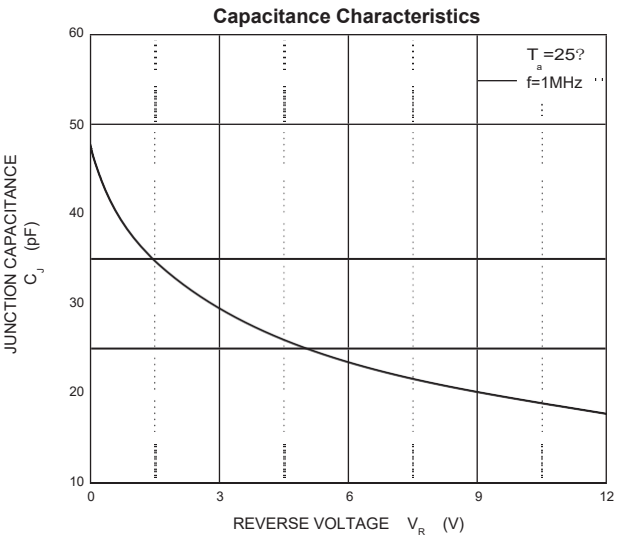
ESD pulse waveform according to IEC 61000-4-2

TYPICAL CHARACTERISTICS



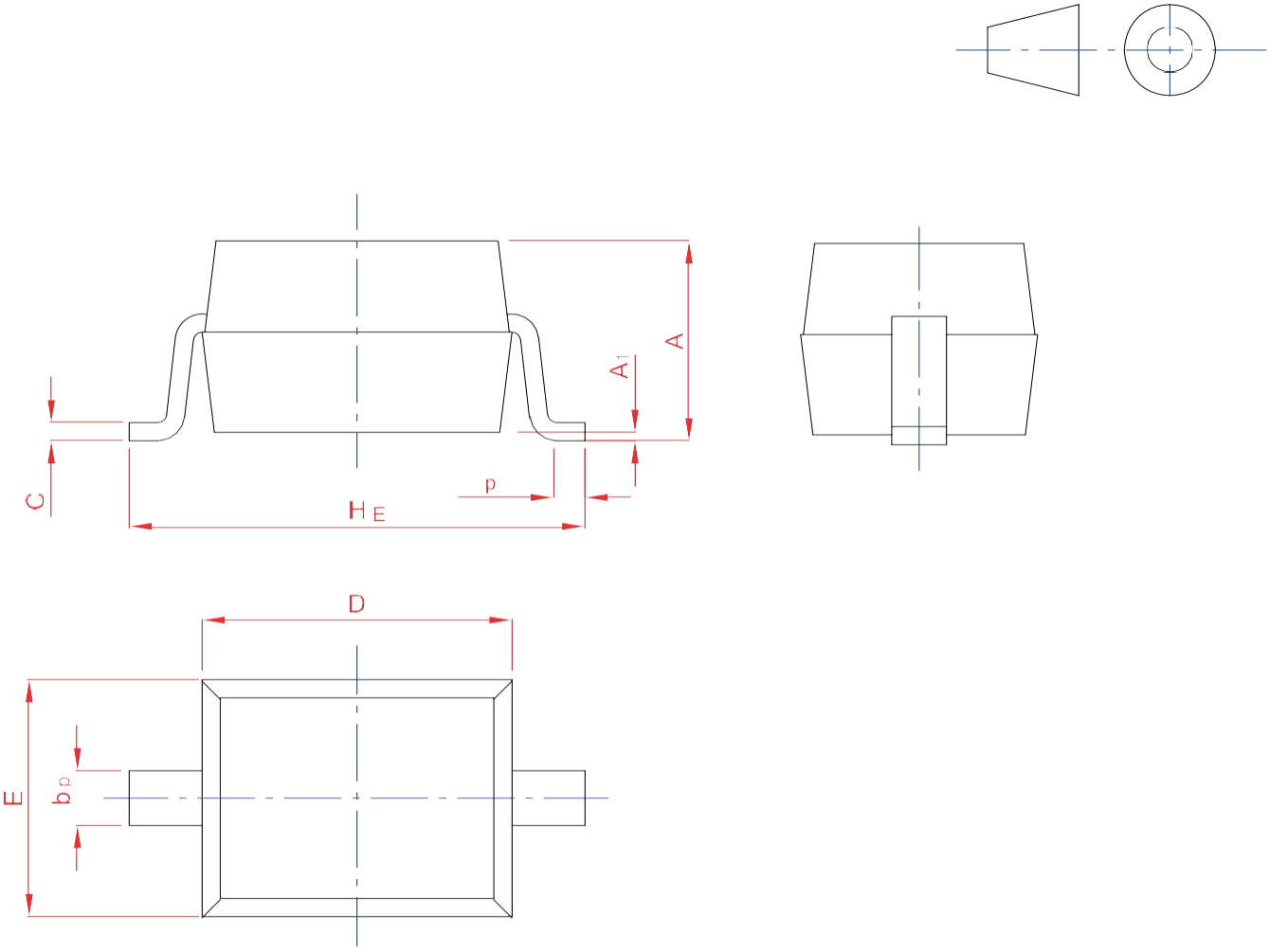






PACKAGE OUTLINE

Plastic surface mounted package; 2 leads **SOD-323**



UNIT	A	b_p	C	D	E	H_E	A_1	L_p
mm	1.20 0.90	0.40 0.25	0.15 0.10	1.80 1.60	1.35 1.15	2.80 2.30	0.10 0.01	0.50 0.20